NOAA POES PROGRAM

On Orbit Satellite Performance

Presented to:

39th ARGOS OPERATIONS COMMITTEE CONFERENCE

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Perpignan, France

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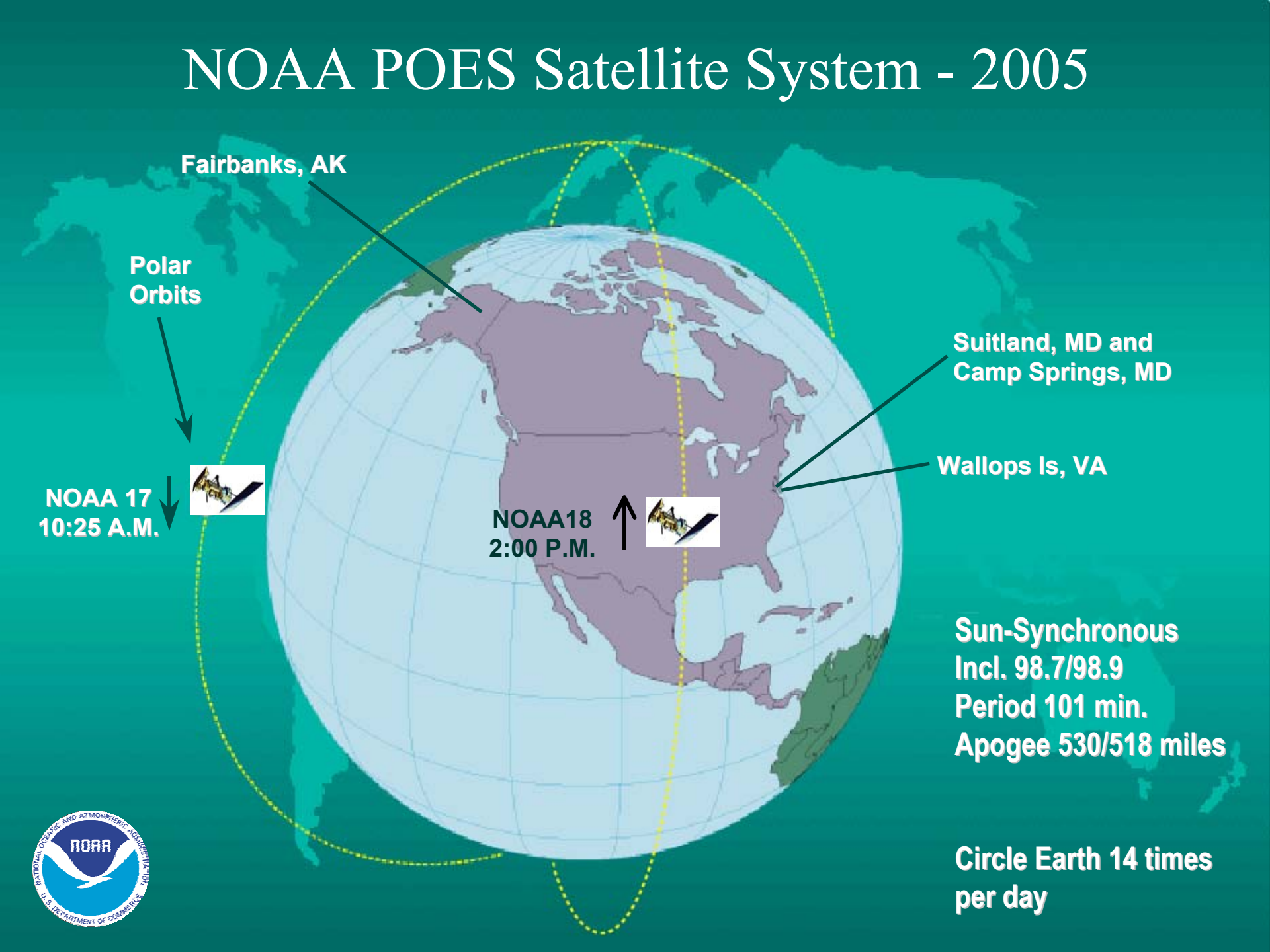
TOPICS

- **STATUS OF OPERATIONAL SATELLITES**
  - NOAA-12 through 18
  - Drift rates and Equator Crossing Times
- **SATELLITE CONSTELLATION STATUS**
  - NOAA-12 through 18 (data recovery status)
  - Instrument and Subsystem Status
  - Real-time Orbits

NOAA POES Satellite System - 2005



STATUS OF OPERATIONAL SATELLITES

- **<u>NOAA-18/N</u> (Launched May 2005)**
  - PM Satellite (Primary orbit)
    - *DCS* has DRU8 anomaly, all other DRUs functional
  - Technical status:
    - Currently, SOCC retrieves all DCS data for every 24 hour period through GAC playbacks because of OV period equivalent with primary afternoon mission priority (10-11 playback passes/day).

STATUS OF OPERATIONAL SATELLITES

- **<u>NOAA-17/M</u> (Launched June 2002)**
  - mid AM Satellite (Primary orbit)
    - *DCS Fully Operational*
    - AMSU A1 failure-power supply (requires NOAA 15 data recovery, good for Argos)
  - Technical status:
    - STX3 degradation (affects very small dish users of HRPT)
    - Currently, SOCC retrieves all DCS data for every 24 hour period through GAC playbacks with primary morning mission priority (10-11 playback passes/day).

STATUS OF OPERATIONAL SATELLITES

- **<u>NOAA-16/L</u> (Launched Sep 2000)**
  - PM Satellite (Primary orbit)
    - *DCS Fully Operational*
  - Technical status:
    - Currently, SOCC retrieves all DCS data for every 24 hour period through GAC playbacks with primary PM mission priority (10-11 playback passes/day).
    - Once NOAA-18 is declared operational, NOAA-16 will become 'back-up' afternoon satellite. This will most likely occur in late summer 2005 at which time data recovery timeliness will decrease substantially.
    - Data recovery could be increased dramatically if NPOESS Svalbard facility is used operationally. Testing will begin in July 2005.

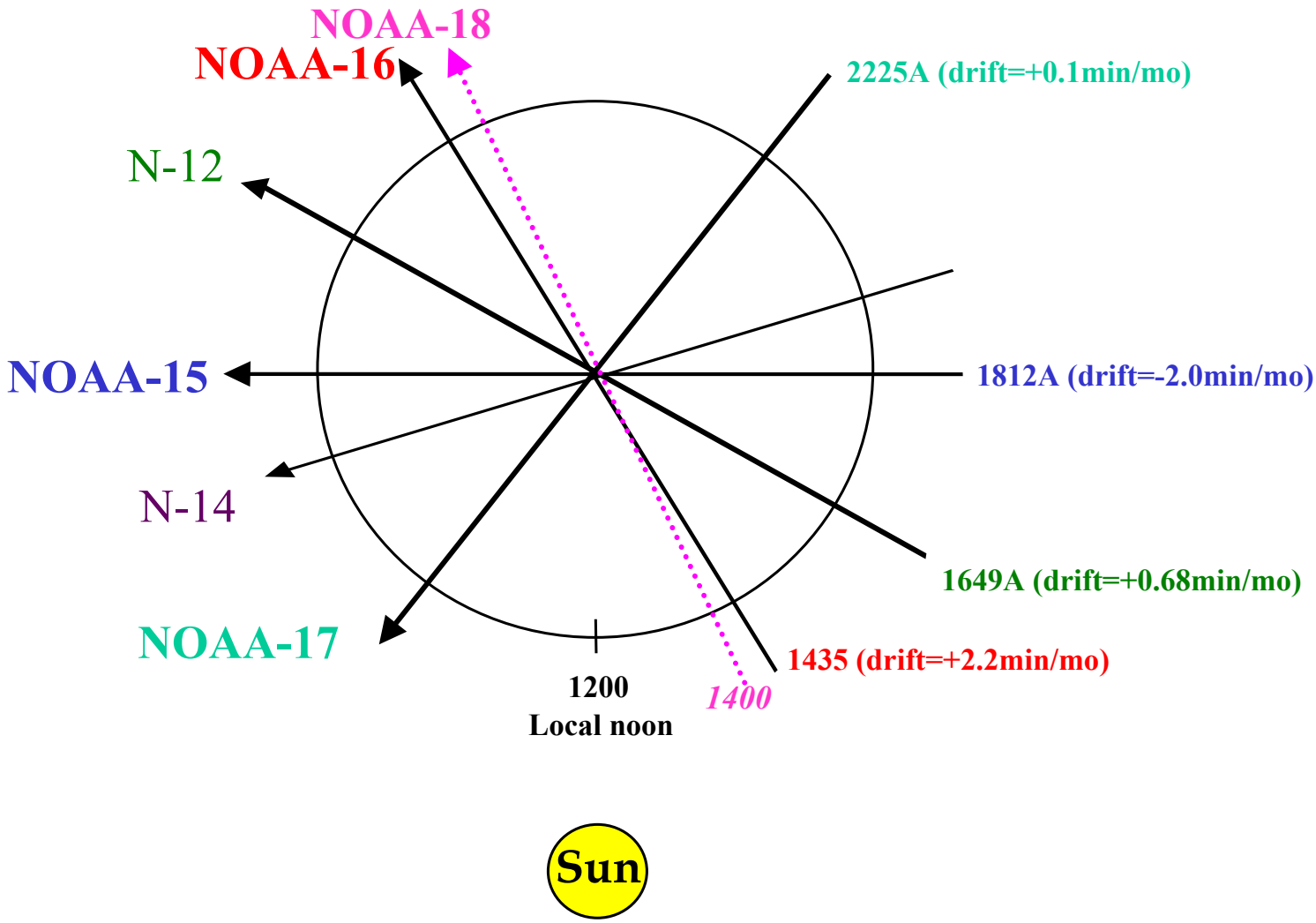
STATUS OF OPERATIONAL SATELLITES

- **<u>NOAA-15/K</u> (Launched May 1998)**
  - Primary AM Satellite, due to erratic AVHRR, HIRS, and AMSU on NOAA-16 and NOAA-17
  - Most instruments operating nominally
    - *DCS Fully Operational*
  - Technical Status:
    - Currently, SOCC retrieves all DCS data for every 24 hour period through GAC playbacks with primary morning mission priority (8 playback passes/day).
    - Antenna anomalies allow only omni directional antenna to be used for non-realtime (GAC) data retrieval.

STATUS OF OPERATIONAL SATELLITES

- **<u>NOAA-14/J</u> (Launched Dec 1994)**
  - Backup PM Satellite;
  - *DCS Fully Operational*
    - Currently, SOCC retrieves all DCS data for every 24 hour period through STIP playbacks with backup morning (drifted into N15 orbit) mission priority (4 playback passes/day).
- **<u>NOAA-12/D</u> (Launched May 1991)**
  - Backup AM satellite
  - *DCS Fully Operational*
    - Currently, SOCC retrieves 3 hours (2 orbits) of DCS data for every 24 hour period through a single STIP playback with backup morning mission priority. (1 playback pass/day, not routine coverage).
- **<u>NOAA-11/H</u> (Launched Sept 1988)**
  - Deactivated June 16, 2004 with DCS community "blessing"

POES
CONSTELLATION STATUS



STATUS OF OPERATIONAL SATELLITES (Continued)

DRIFT RATES AND EQUATOR CROSSING NODES (ECN) As of June 2004

Spacecraft	Launch Date	Equator Crossing Times	Drift Rate
NOAA-18	MAY 2005	1400 Ascending	+0.4 min/month
NOAA-17	JUNE 2002	1020 Descending	+1.0 min/month
NOAA-16	SEPT 2000	1437 Ascending	+1.0 min/month
NOAA-15	MAY 1998	0637 Descending	-1.6 min/month
NOAA-14	DEC 1994	1930 Ascending	+5.0 min/month
NOAA-12	MAY 1991	0444 Descending	-0.2 min/month

CURRENT ON-ORBIT DATA CONFIGURATION

NOAA-18 OV	NOAA-17 PRIMARY A.M.	NOAA-16 PRIMARY P.M.	NOAA-15 BACKUP A.M.	NOAA-14 STANDBY	NOAA -12 STANDBY
GACS	GACS	GACS	GACS	STIP	STIP
	LACS	LACS	No LACS (Downlink constraints)	No LACS	No LACS
HRPT-STX-1 LOW FREQ	HRPT-STX-3 HIGH FREQ	HRPT-STX-1 LOW FREQ	HRPT STX-2 MID FREQ	HRPT STX-1 LOW FREQ	HRPT-STX-1 LOW FREQ
APT VTX2 137.9125	APT	No APT	APT	No APT	APT
Average# of supports taken 13 daily 92 weekly	Average # of supports taken 13 daily 87.5 weekly	Average # of supports taken 13 daily 91.5 weekly	Average # of supports taken 9 daily 64 weekly	Average # of supports taken <3.5 per day. Requested minimum of *4 daily*	Average # of supports taken <1.5 per day. Requested minimum of *4 daily*

POES On-Orbit Status As of 15 June 2005

* indicates change from previous briefing, # indicates issues outstanding

Spacecraft Subsystems	NOAA18	NOAA17	NOAA16	NOAA15	NOAA14	NOAA12
Ascending Node +/- 5 mins	1359	2225	1443	1805	2042	1652
Mission Data Category	OV	PRI	PRI	Back Up	SEC	SEC
Instruments						
Adv. Hi Resolution Radiometer (AVHRR)			Y	Y	R	
High Resolution Infrared Sounder (HIRS)	#		Y	Y *		R
Adv Microwave Sounding Unit (AMSU-A1)		R	Y	Y	N/A	N/A
Adv Microwave Sounding Unit (AMSU-A2)					N/A	N/A
Adv Microwave Sounding Unit (AMSU-B)	N/A			Y	N/A	N/A
Microwave Humidity Sounder (MHS)		N/A	N/A	N/A	N/A	N/A
Microwave Sounding Unit (MSU)	N/A	N/A	N/A	N/A	Y	R
Stratospheric Sounding Unit (SSU)	N/A	N/A	N/A	N/A		N/A
Data Collection Subsytem (DCS)	#					
Search and Rescue Repeater (SARR)			Y	Y		N/A
Search and Rescue Processor (SARP)					R	N/A
Space Environment Monitor (SEM)					Y	
Solar Backscatter UV Radiometer (SBUV)			Y	N/A	Y	N/A
Spacecraft Subsystems						
Command and Control					Y	
Electrical Power				*e-season	Y	e-season
Attitude Determination and Control	#					
Communications			Y	Y		
Thermal Control				Y		
Data Handling (Recorders)	#		Y		Y	Y

Operational – Capable of meeting all requirements

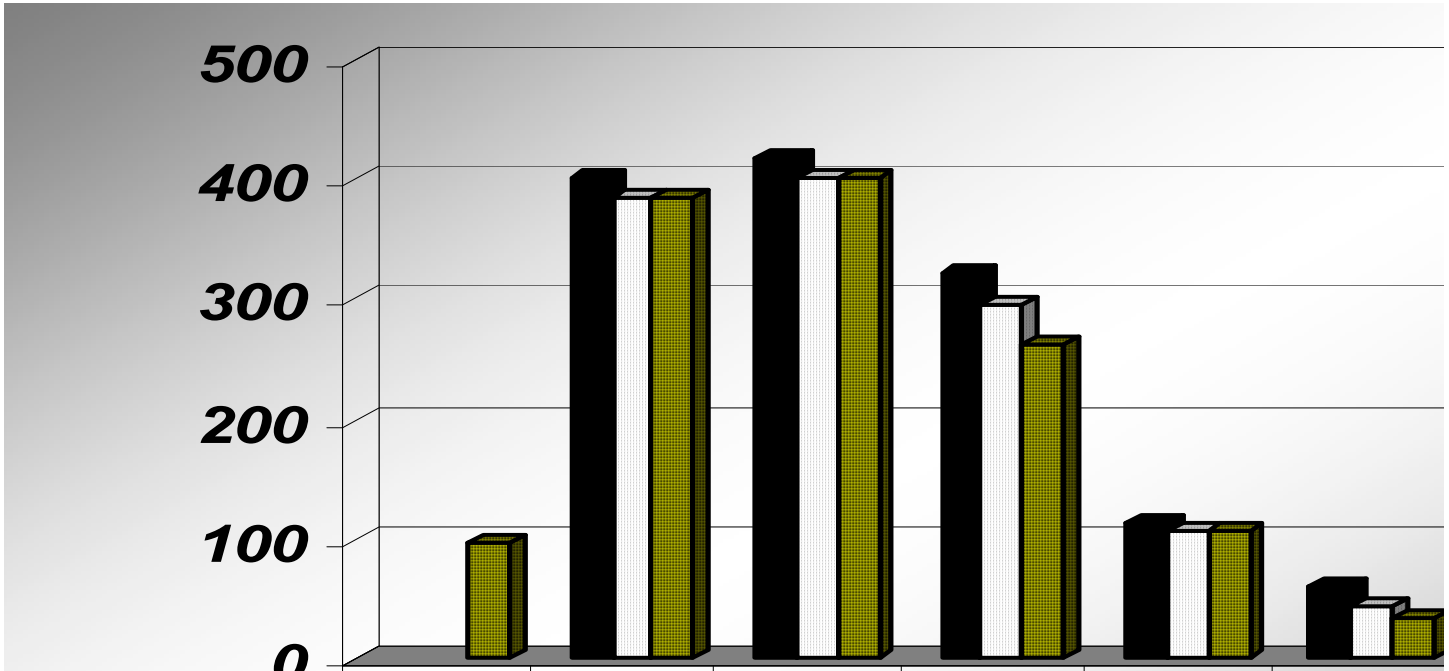
Severely Degraded – Unable to meet most requirements

Degraded (Limited operational use) – Capable of meeting some, but not all requirements

Failed – Unable to meet any requirements

POES Passes Since Previous Briefing (through 31 May 05)

* Indicates N18 OV CDA (only) supports from 24-31 May



	N18	N17	N16	N15	N14	N12	Totals
Mar		404	418	322	115	62	1321
Apr		385	404	295	108	46	1238
May	99	386	403	262	109	34	1293
Totals	99*	1175	1225	879	332	142	